CLAIMS

1. Simulator (1) constructed for the simulation of firing mounted onto a weapon (2) with a sight (3), in which the simulator (1) is equipped with a first device (12) that emits an electromagnetic simulator beam exiting along a simulator axis (5), **characterised** in that
- the simulator (1) is also equipped with a second device (13) that generates an alignment beam along an alignment axis (7)
- the angle between the simulator axis (5) and the alignment axis (7) is fixed and known, and that
- the simulator (1) includes a means of adjustment that collectively guides the alignment axis (7) and the simulator axis (5) during the alignment of the simulator axis (5) with the sight (3) so that the said axes during the alignment maintain the fixed relative angular relationship.

2. Simulator according to claim 1, **characterised** in that the first device (12) consists of a laser emitter.

3. Simulator according to claim 1, **characterised** in that the simulator (1) includes a wavelength converter that converts the alignment beam to visible light.

4. Simulator according to claim 1 or 2 or 3, **characterised** in that a reflection device (17) that reflects the alignment beam (6) so that it becomes visible in the sight (3) of the weapon is arranged with the simulator (1).

5. Simulator according to claim 4, **characterised** in that the reflection device (17) consists of a first mirror (18) and a second mirror (19) that function as a roof prism and deflect the alignment beam (6) by 90° and a third mirror (20) placed at such a distance from the first and second mirrors and at such an angle relative to them that the alignment beam (6) is reflected into the sight (3) with the alignment axis (7) parallel to the simulator axis (5).

6. Simulator according to claim 5, **characterised** in that the reflection device (17) consists of a prism (21) with first reflecting surfaces (22) and a second reflecting surface (23) arranged at such an angle relative to each other that the alignment beam (6) is deflected back into the sight (3) with the alignment axis (7) parallel to the simulator axis (5).

7. Simulator according to claim 4, **characterised** in that the reflection device consists of a reversing prism (21) dimensioned so that the alignment beam (6) is deflected back into the sight (3), and where an optical wedge (24) is arranged in the pathway of the alignment beam (6) by the reversing prism, whereby the optical wedge (24) refracts the alignment beam (6) so that the alignment axis (7) at the sight (3) becomes parallel with the simulator axis (5).

8. Simulator according to claim 6 or 7, **characterised** in that the prism (21) has a transparent part at least at the line of sight of the sight (3), whereby aiming can still be carried out even though the prism (21) is placed in or in front of the sight.

9. Simulator according to claim 1, characterised in that the fixed angle between the simulator axis (5) and the alignment axis (7) is zero degrees, that is, the said axes are mutually parallel.

10. Simulator according to claim 9, **characterised** in that the first device (12) consists of a laser emitter.

11. Simulator according to claim 9, **characterised** in that the simulator (1) includes a wavelength converter that converts the alignment beam to visible light.

12. Simulator according to claim 9 or 10 or 11, **characterised** in that the alignment beam and the simulator beam exit in the same direction and that to the simulator (1) is attached a reflection device (10, 11) that reflects the alignment beam in the opposite direction so that the alignment beam becomes visible in the sight of the weapon.

13. Simulator according to claim 12, **characterised** in that the reflection device consists of a projection screen.

14. Simulator according to claim 12, **characterised** in that the reflection device consists of a collimator (10).

15. Simulator according to claim 12, **characterised** in that the reflection device consists of a reversing prism column (11).

16. Simulator according to claim 15, **characterised** in that the reversing prism column (11) has a transparent part at least in the line of sight of the sight (3), whereby aiming can be carried out despite the fact that the reversing prism column (11) is placed in or in front of the sight.

17. Simulator according to claim 1, **characterised** in that the alignment beam (6) is generated by an illuminated reticle (13) in the focal plane of an optical system.

18. Simulator according to claim 17, **characterised** in that the reticle (13) is illuminated by means of an artificial light source.

19. Simulator according to claim 17, **characterised** in that the reticle (13) is illuminated with the aid of a means of guiding light that guides ambient light to the reticle.

20. Simulator according to claim 1, **characterised** in that the alignment beam (6) and the simulator beam (4) have common focussing optical elements for their focussing.

21. Simulator according to claim 20, **characterised** in that the alignment beam (6) and the simulator beam (4) are generated by components that are mechanically attached to each other in the focal plane of the common optical system.

22. Simulator according to claim 1, **characterised** in that those parts of the simulator (1) that are only required during adjustment are arranged in a demountable module.

23. Simulator according to claim 22, **characterised** in that the demountable module includes at least one of the devices related to the alignment beam (6).

24. Simulator according to claim 23, **characterised** in that the demountable module includes parts of the means of adjustment.

25. Simulator according to claim 23, **characterised** in that the demountable module includes a means for storing data that has been supplied to the simulator (1) in association with an alignment.

26. Simulator according to claim 1 or 9, **characterised** in that the alignment mark (9) is designed with graphical symbols, such as arrows or equivalent pointers, so that it gives a graphical guidance in which direction the means of adjustment must be set when alignment is to be carried out.

27. Method of alignment of a simulator (1) mounted onto a weapon (2) with sight (3) **characterised** in that the method includes the following steps:
- the simulator emits an electromagnetic simulator beam (4) that exits along a simulator axis (5),
- the simulator generates an alignment beam (6) along an alignment axis (7), which forms a fixed and known angle relative to the said simulator axis (5),
- the alignment axis (7) and the simulator axis (5) by means of a means of adjustment are collectively guided so that the said axes during an alignment or during an adjustment of the alignment maintain the said fixed relative angular relationship to each other and that
- the alignment axis (7) is adjusted to be parallel with the sighting axis (8) of the sight (3).

28. Method according to claim 27, **characterised** in that a wavelength converter converts the alignment beam to visible light.

29. Method according to claim 27, **characterised** in that the simulator beam is caused to be reflected form a wavelength converter material, whereby visible light is emitted and used as the alignment beam (6).

30. Method according to claim 27, **characterised** in that the alignment beam produces an alignment mark (9) that becomes visible to the firer when the sight (3) of the weapon (2) is used.

31. Method according to claim 29, **characterised** in that the alignment mark (9) is made visible only in association with the conduct of an alignment or a check of the alignment.

32. Method according to claim 29, **characterised** in that the alignment mark (9) is made visible in association with every shot fired by the weapon so that the firer obtains confirmation that a simulation shot has been fired and that the alignment is still correct.

33. Method according to claim 27, **characterised** in that the alignment beam (6) and the simulator beam (4) are focussed by means of the same optical components.